

## Silverbell Landfill Water Quality Assurance Revolving Fund Site January 2006

### SITE DESCRIPTION

The Arizona Department of Environmental Quality (ADEQ) is overseeing the City of Tucson's investigation of groundwater and soil contamination at the Silverbell Landfill Water Quality Assurance Revolving Fund (WQARF) Site. The ADEQ WQARF program, which is also known as state Superfund, investigates and cleans up contaminated groundwater and soil sites throughout the state.

The Silverbell Landfill WQARF Site is located in west Tucson at 3200 North Silverbell Road, and is bounded approximately by Sweetwater Drive to the north, Interstate 10 to the east, Grant Road/Ironwood Hill Drive to the south and Silverbell Road to the west. The City of Tucson, owner and operator of this now closed municipal solid waste landfill, conducts site investigations and cleanup operations with ADEQ oversight.

Groundwater at the site is contaminated with tetrachloroethene (PCE) and trichloroethene (TCE) occurring over regulatory limits. Depth to groundwater is about 145 feet below ground surface.

### SITE HISTORY

The Silverbell Landfill is made up of two cells which comprise a total of 40 acres. The landfill received wastes between 1966 and 1977, and did not accept hazardous waste, although landfill access was not strictly controlled. The south cell of the landfill has been covered with four feet of soil. The north cell has



*The Silverbell Landfill is a closed municipal solid waste landfill owned and operated by the City of Tucson.*

been covered and revegetated and now lies next to the Silverbell Golf Course.

The city began conducting subsurface investigations in 1985 and submitted a cleanup proposal to ADEQ. PCE and TCE were found at levels that exceeded regulatory limits in both private production and groundwater monitor wells.

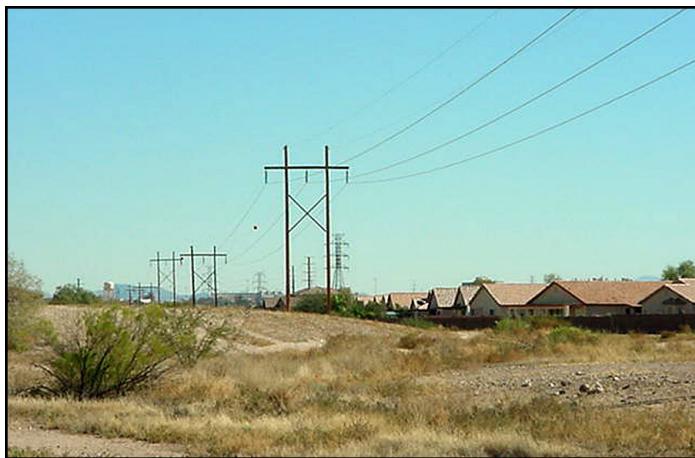
The Silverbell Landfill site was placed on the WQARF Registry in April 1999.

### SITE INVESTIGATION/CLEANUP ACTION

The city, with oversight by ADEQ, prepared a Remedial Action Plan for the Silverbell Landfill. The city proposed a pump and treat system to extract contaminated groundwater from the aquifer, treat it to remove the contaminants, and then reinject it into the aquifer or use it to water the Silverbell Golf Course.

In 1996, ADEQ approved the city's request to conduct a pilot study to evaluate the effectiveness of recirculation well technology at the WQARF site to replace or enhance the approved pump and treat system. The city concluded that the recirculation well technology would not be an effective remedy for the site. With ADEQ oversight, the city is now evaluating a groundwater remedy consisting of monitored natural attenuation with enhanced bioremediation for the source areas. A pilot test, using sodium benzoate to stimulate indigenous microbes, began in June 2003 and will take approximately two years before results are available.

From October 1999 to December 2003, the city operated a soil vapor extraction (SVE) system which



*Homes have been built in close proximity to the old landfill site.*

removed a total of 2,026 pounds of volatile organic compounds (VOCs). Testing in several soil gas probes indicate concentrations have decreased allowing the system to be shut off since December 2003. However, the system is operated intermittently to control methane migration. The city continues regular soil vapor sampling for a possible rebound in soil gas concentrations.

### Kinder Morgan Gasoline Pipeline Spill

In July 2003, a gasoline pipeline operated by Kinder Morgan Energy Partners broke in proximity to the WQARF site. Soil borings and groundwater monitoring wells have been installed to assess the extent of contamination. Gasoline-impacted soils have also been removed and replaced with clean soil. Although thousands of gallons of gasoline were recovered from the Silvercroft Wash and have been removed from the groundwater since the initial pipeline break, groundwater production wells do not show impacts from gasoline.

In 2004, Kinder Morgan identified the presence of VOCs in the soil vapors within the Silver Creek subdivisions. VOCs were also detected during sampling of groundwater monitor wells. ADEQ conducted additional soil vapor testing in October 2004 within the Silver Creek I and II subdivisions to confirm and expand upon the Kinder Morgan findings. ADEQ's sampling also detected compounds in shallow soil vapors of the subdivision.

The Arizona Department of Health Services (ADHS) conducted a Health Consultation, to evaluate whether soil vapors from VOCs in the subsurface near the Silver Creek Subdivision posed any health effects to residents. The report, released in June 2005, concluded that the observed concentrations of compounds in soil vapors pose no apparent public health hazard.



*The City of Tucson has installed an automated enhanced bioremediation system and a soil vapor extraction (SVE) system at the edge of the landfill as part of a Remedial Action Plan.*

### HEALTH/WATER QUALITY

ADHS also completed a Draft Baseline Human Health Risk Assessment in November 1993 of the Silverbell Landfill site. Even though no significant health risks were identified, the risk assessment expressed a concern for possible exposure routes for PCE and TCE through privately owned wells.

Public and semi-public wells are regulated and are required to be sampled periodically. Private well owners are not required by the state to sample their wells, and may be at risk of exposure in the vicinity of this site. If you are using a private well near the site area, please call Sherri Zendri, ADEQ Project Manager.

There are potential risks associated with exposure to VOCs, principally through drinking contaminated groundwater. No one is known to be drinking contaminated water at this site; therefore, no one is known to be exposed or at risk of exposure to the contaminants. Cleanup activities are important to ensure the quality of future drinking water supplies.

### FOR MORE INFORMATION:

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#### Community Involvement:

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#### Kinder Morgan Gasoline Pipeline Information:

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Complete public files regarding the site are located at ADEQ's Phoenix office. Call 1(800) 234-5677 for information.

For more information on this WQARF site or other WQARF sites in the State of Arizona, please visit the ADEQ Web site at: [www.azdeq.gov](http://www.azdeq.gov). In the left-hand column, click on Waste Programs, then on Superfund Programs. Look for the Site Information and Maps Link.

Para información en español sobre este sitio, se puede contactar a Melissa Hayes al (520) 770-3309.